WHAT IS CLAIMED IS:

1. A demodulation circuit for CDMA mobile communications, including:

a calculation portion for calculating a delay profile, which indicates a signal power distribution with respect to signal delay time, based on received signals upon receiving I-component and Q-component signals as outputs of orthogonal detection; and

a path search portion for selecting paths with a large signal power from the delay profile calculated by said calculation portion to assign it to a finger portion,

wherein the path search portion comprises:

a path comparison portion for determining whether one and the same path is detected successively or not;

a detection portion for detecting the variation between currently detected path and previously detected path when the path comparison portion determined that one and the same path has been detected successively; and

a path replacement control portion for excluding a path with a maximum variation from the finger portion and assigning a new path to the finger portion if the variation of said path with the maximum variation within the paths already assigned to the finger portion by the detection portion, has the variation larger than/equal to a predetermined variation threshold when said new path, which is not assigned to the finger portion and has a power level higher than/equal to a predetermined assignment threshold, is detected.

2. The demodulation circuit for CDMA mobile communications according to claim 1,

wherein said path replacement control portion excludes said path with a maximum variation from the finger portion and assign said new path to the finger portion when the level of the path with a minimum reception level within the paths already assigned to the finger portion is higher than/equal to a predetermined assignment exclusion threshold, and excludes said path with a minimum reception level and assign said new path to the finger portion when the level from the finger portion of said path with the minimum reception level is lower than said assignment exclusion threshold.

3. The demodulation circuit for CDMA mobile communications according to claim 2,

wherein said path replacement control portion excludes said path with the maximum variation or said path with the minimum reception level from the finger portion and assigns said new path to the finger portion when the reception level of said new path is higher than/equal to a replacement level replaceable to the finger portion.

4. The demodulation circuit for CDMA mobile communications according to claim 1,

wherein said detection portion detects at least either one of the timing variation between the timing of currently detected path and the timing of previously detected path and the level variation between the reception level of currently detected path and the reception level of previously detected path.

5. A demodulation method for CDMA mobile communications for calculating a delay profile, which upon receiving I-component and Q-component signals showing orthogonal detection outputs, indicates signal power distribution with respect to delay time, based on the received signals, and assigning a path with a large signal power to a finger portion by selecting it from the calculated delay profile,

wherein said method comprises:

a first step for determining whether one and the same path has been successively detected or not;

a second step for detecting the variation between currently detected path and previously detected path when it is determined that one and the same path has been detected based on the processing of said first step; and

a third step for excluding a path with a maximum variation from the finger portion and assigning a new path to the finger portion when the variation of the path with a maximum variation within the paths already assigned to the finger portion based on the processing of said second step, has the variation larger than/equal to a predetermined variation threshold if a new path which is not assigned to the finger portion and has a level higher than/equal to a predetermined assignment threshold, is detected.

6. The demodulation method according to claim 5,

wherein the processing of said third step comprises a forth step for excluding said path with the maximum variation from the finger portion and assigning said new path to the finger portion when the level of the path with a minimum reception level

within the paths already assigned to the finger portion is higher than/equal to a predetermined assignment exclusion threshold, and for excluding said path with the minimum reception level from the finger portion and assigning said new path to the finger portion when the level of said path with the minimum reception level is lower than said assignment exclusion threshold.

7. The demodulation method according to claim 6,

wherein the processing of said third step comprises a fifth step for excluding said path with a maximum variation or said path with the minimum reception level from the finger portion and assigning said new path to the finger portion when the reception level of said new path is higher than/equal to a replacement level replaceable to the finger portion.

8. The demodulation method according to claim 5,

wherein the processing at said second step comprises a sixth step for detecting at least either one of the timing variation between the timing of currently detected path and the timing of previously detected path and the level variation between the reception level of currently detected path and the reception level of previously detected path.

9. The demodulation circuit for CDMA mobile communications according to claim 1,

wherein the path replacement processing is controlled by using a protective step number which can be determined at said path comparison portion, not by calculating variations at said

detection portion during the finger assignment path replacement processing.

10. The demodulation method according to claim 5,

wherein path replacement processing is controlled by using a protective step number which can be determined at said first step, not by calculating variations at said second step during the finger assignment path replacement processing.